REMARKS

Reconsideration of the above-referenced application in view of the above amendment, and of the following remarks, is respectfully requested.

Claims 1-7 and 9-12 are pending in this case. Claims 1, 3, and 7 are amended herein.

The Examiner rejected claims 1-2, 4-7 and 9-12 under 35 U.S.C. 102(e) as being anticipated by Zistl et al. (U.S. Patent 6,806,191).

Applicant respectfully submits that amended claim 1 is unanticipated by Zistl as there is no disclosure or suggestion in Zistl of gaseously doping the copper film with silicon by flowing a gas chemistry consisting of silane over the copper film. Zistl teaches applying a first and a second reactive plasma environment to a copper film at a surface of a semiconductor wafer. The first reactive plasma environment comprises nitrogen and ammonia. The second reactive plasma environment is created by adding silane to the first reactive plasma environment. (col.6, lines 7-10). Thus, the second reactive plasma environment comprises silane, nitrogen and ammonia. There is no disclosure or suggestion in Zistl of flowing a gas chemistry consisting of silane over the copper film as required by the claim. Accordingly, Applicant respectfully submits that claim 1 and the claims dependent thereon are unanticipated by Zistl.

Applicant respectfully submits that claim 7 is unanticipated by Zistl as there is no disclosure or suggestion in the reference of doping said copper interconnect with silicon by flowing silane over a surface of the copper interconnect with the RF power off prior to striking a plasma. As discussed above, Zistl teaches applying a first and a second reactive plasma environment to a copper film at a surface of a semiconductor wafer. Silane is added while the RF power is on rather than off as required by the claim. The first reactive plasma environment of Zistl comprises nitrogen and ammonia. The second reactive plasma environment is created by adding silane to the first reactive plasma environment. (col. 6, lines 7-10). As pointed out in the reference (Col. 5, lines 63-66) upon the application of the RF power, a reactive plasma environment is established. The silane in Zistl is added to a previously created plasma (RF on) instead of prior to striking the plasma (RF off) as required by the claim. Accordingly, Applicant respectfully submits that claim 7 and the claims dependent thereon are unanticipated by Zistl.

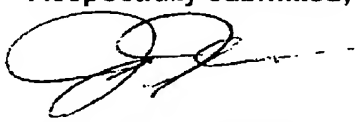
The Examiner rejected claim 3 under 35 U.S.C.§ 103(a) as being unpatentable over Zistl et al. (U.S. Patent 6,806,191).

Applicant respectfully submits that claim 3 is patentable over Zistl as there is no disclosure or suggestion in the reference of doping the copper film with silicon by flowing a gas chemistry consisting essentially of silane over the copper film with an RF power off. Zistl teaches flowing silane in a plasma environment (RF power on) rather than in a non-plasma environment (RF power off). Accordingly, Applicant respectfully submits that claim 3 is patentable over the references.

The other references cited by the Examiner have been reviewed, but are not felt to come within the scope of the claims as amended.

In light of the above, Applicant respectfully requests withdrawal of the Examiner's rejections and allowance of claims 1-7 and 9-12. If the Examiner has any questions or other correspondence regarding this application, Applicant requests that the Examiner contact Applicant's attorney at the below listed telephone number and address.

Respectfully submitted,



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